



Section D. Maneuvering to or from a Dock

Overview

Introduction

The most challenging and probably most frequent maneuvering you will encounter is that associated with getting in and out of slips, dock areas, piers, boat basins or marinas.

In this section

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General Considerations

D.1. General

When maneuvering to or from a dock, keep the following points in mind. Brief the crew on procedures to be used.

D.2. Compensate for wind or current

Check the conditions before maneuvering. Always try to take advantage of wind and current when docking or mooring. To maintain best control, approach against the wind and current and moor on the leeward side of a mooring when possible. Chances are that when you get underway, conditions aren't the same as when you moored.

D.3. Rig and lead mooring lines and fenders early

Rig and lead mooring lines and fenders well before the approach. Get the noise and confusion over with long before the coxswain must concentrate and maneuver to the dock.

Though common practice is to leave mooring lines attached to the home pier, always have a spare mooring line and moveable fender on the boat and at the ready while approaching any dock, including the home pier.

D.4. Control, not speed

Emphasize control, not speed, when docking. Keep just enough headway or sternway to counteract the winds and currents and allow steerage while making progress to the dock. Keep an eye on the amount of stern or bow swing. With a high foredeck, the wind can get the bow swinging much easier than it is to stop. In higher winds, a greater amount of maneuvering speed may be needed to lessen the time exposed to the winds and currents, but be careful not to overdo it.

D.5. Use clear line handling commands

Line handling is extremely important when docking. Give specific line-handling instructions in a loud, clear voice. Ensure they are understood, particularly by any helpful individuals near the dock. Less-than-good line handling always ruins the docking at the end of a perfect approach. Ideally, try to have the boat stopped, alongside the pier before putting lines over.



Basic Maneuvers

D.6. General

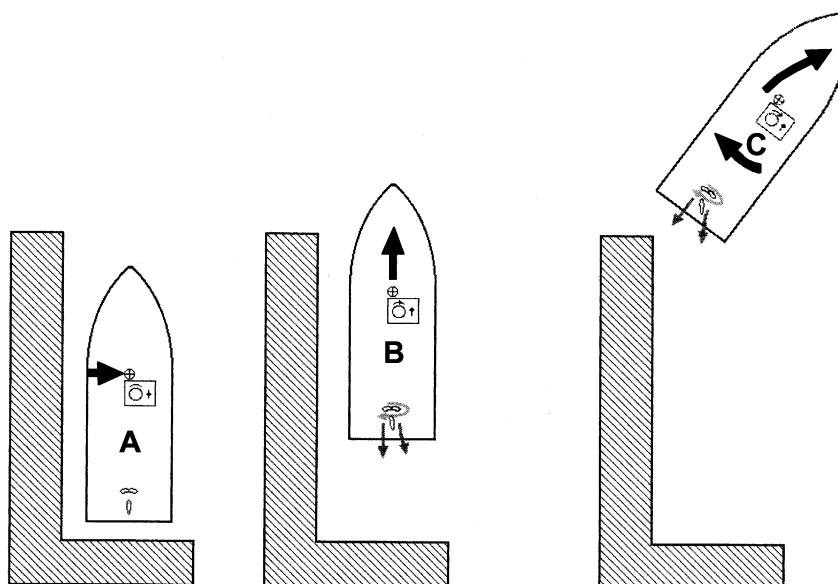
Often, the presence of other craft or obstructions will complicate the clearing of a berth, or any simple maneuver. Wind and/or current can also become a factor. Before maneuvering, evaluate the options in order to take full advantage of the prevailing conditions.

This part has three examples of mooring and unmooring. Additional examples appear in [Appendix B] to this chapter.

D.7. Clear a slip

This assumes that there is no wind or current and the vessel is a single-screw. See Figure 10-17.

Step	Procedure
1	Set rudder amidships.
2	Apply slight right rudder to offset propeller side force.
3	Use ahead throttle and move ahead slowly (b).
4	As the boat gains headway, apply additional helm to turn (c). Remember that the rudder causes the stern to swing in the opposite direction of the bow. Before starting a turn, make sure the stern will clear the pier.



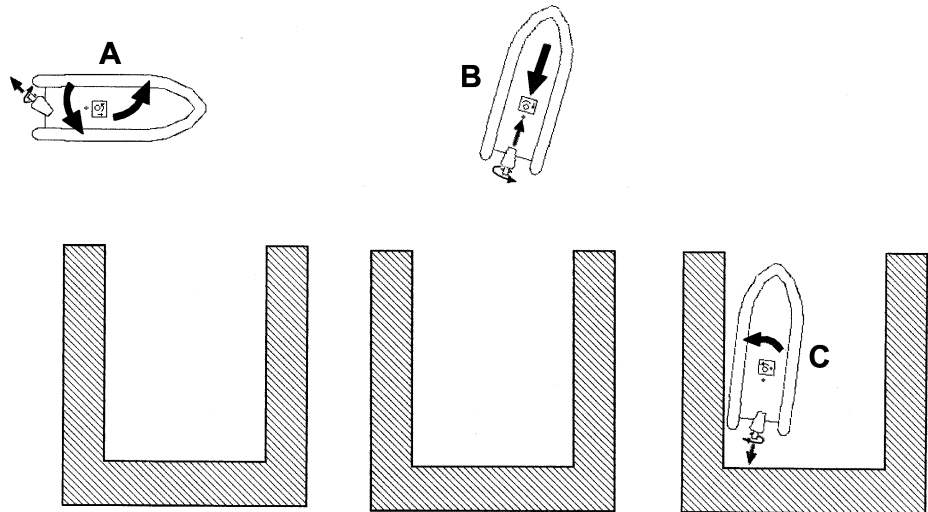
Clear a Slip (no wind or current, single screw)

Figure 10-17

**D.8. Back into a slip**

This assumes that there is no wind or current and the vessel is a single-screw, outboard or I/O. See Figure 10-18.

Step	Procedure
1	Approach at low speed, perpendicular to slip, approximately one-half to one boat-length away.
2	As the amidship section is even with the nearest edge of the slip, apply hard left rudder and “bump” throttle ahead to swing the stern to starboard.
3	As bow swings to port, go to neutral throttle and aim lower unit at the back corner of the slip. Immediately apply astern throttle to stop headway and acquire sternway. Side force will stop swing.
4	Steer lower unit towards slip, just aft of desired final position, offsetting for side force as necessary, using astern clutch speed and neutral to keep speed down.
5	When almost alongside, apply slight left rudder and “bump” throttle ahead, then go to neutral.



Back Into a Slip (no wind or current, single outboard/stern drive)
Figure 10-18

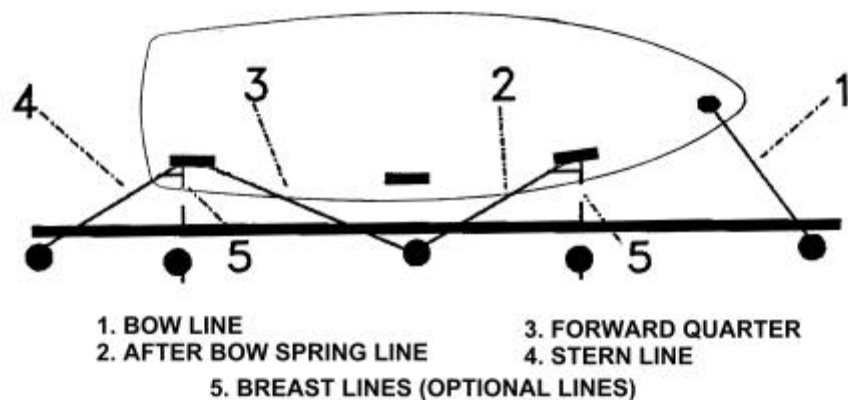
**D.9. Clear a pier**

This assumes that the vessel is a twin-screw, has its port side to windward side of pier, and that there are vessels moored ahead and astern.

Step	Procedure
1	Go ahead on starboard screw, rudder amidship, hold bow spring line (a).
2	Put starboard in neutral, back on port, right rudder, take in spring line (b).
3	As stern clears vessel behind, back on starboard.
4	Get bow away from pier by going ahead on port, while watching stern swing (c).
5	Stop stern swing, if necessary by neutral on starboard.
6	If far enough off pier to clear vessel ahead, go ahead on both engines and steer away from pier.

D.9.a. Mooring lines

Use mooring lines to help maneuver. (See figure 10-19) The bow, #1, and stern, #4, lines are simply to deploy and are usually sufficient, if they are of adequate size. Use finders at strategic points along the hull to prevent chafing against the dock or float.



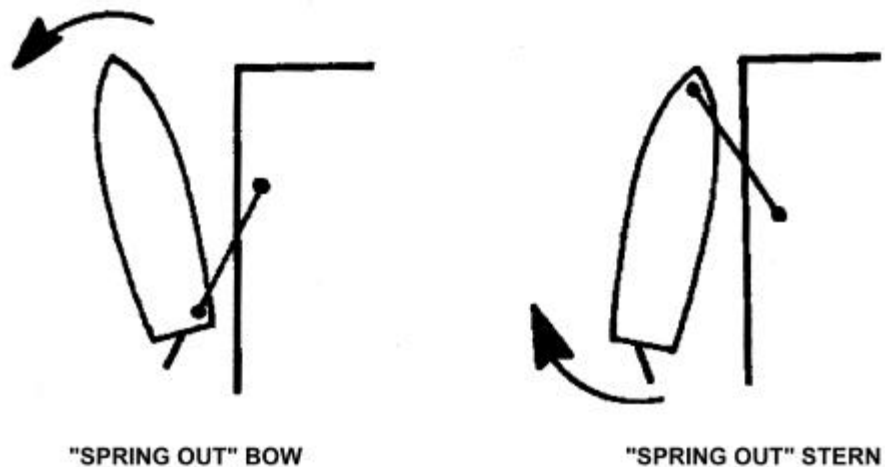
Mooring Lines
Figure 10-19



D.9.b. Spring lines Use the spring lines to prevent the fore and aft movement, or the surge of a boat alongside the dock.

Use just the after bow spring, or bow spring, #2, (leads aft to the dock from the bow) to “spring out” or move the stern away from the dock. The stern will move away with the rudder full toward the dock and the engines ahead. With the rudder turned full away from the dock, the stern will move toward the dock or “spring in.”

Use just the foreword quarter spring, or stern spring, #3, (leads forward to the dock from the quarter) to “spring out” or move the bow away from the dock. By backing down on a boat’s engines with just the forward quarter spring attached to the dock, the bow will move away from the dock (See figure 10-20).



Basic Spring Line Maneuvers
Figure 10-20

D.9.c. Rig lines Use the rig lines under stress for slipping, particularly when no shore side line handlers are available. Both bitter ends should be aboard the boat with the bight around the shore side attachment point. Then the spring line may be let go, or cast off, releasing one end and hauling in the other. Tend a spring line carefully so that it does not foul the rudder or screw or get caught on the dock. When maneuvering, always watch a line tied to a bitt or cleat, never leave it unattended.



Rules of Thumb

D.10. Responsibility

The coxswain is always responsible for the boat regardless of the existing environmental conditions and situations. Care must be exercised before assigning newly qualified coxswains to missions in extreme weather conditions.

D.11. Slow speeds

When maneuvering at slow speeds alongside, use full left (or right) rudders. On twin-screw boats, with the rudders left amidships, use the screws at clutch (idle) speed to maneuver.

D.12. Alongside

When maneuvering alongside, speed should be kept to a minimum. Apply power in short bursts (with rudder at left or right for single screw boats) to get changes in heading; but keep the bursts short enough so you don't increase your speed.

D.13. Port side

Port side moorings are the easiest for single-screw boats with "right-hand" props.

D.14. Backing and filling

Slow speed maneuvers to starboard are best for single-screw boats with "right-hand" props in restricted areas. Do this by:

- Alternately going ahead with the rudder at left full and astern with the rudder at right full.
 - When going ahead, give a quick burst to direct water past the rudder for as long as possible to get maximum twist with minimum headway.
 - When going astern, gradually increase power for as long as the bow continues to go to starboard, or as room permits.
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D.15. Precise control

When requiring precise control, keep the boat's heading into the predominate wind or current, or as close as possible. When maneuvering the boat so that the set from the wind or current is on either the starboard or port bow, the boat may "crab" (move sideways) in the opposite direction.

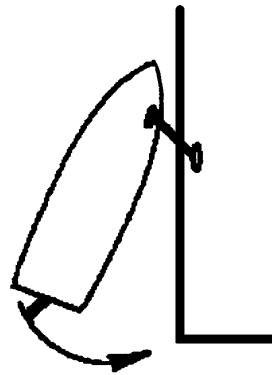


D.16. Wind and current

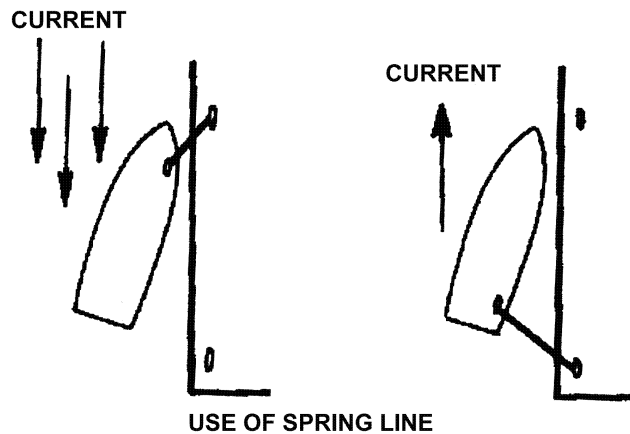
Wind and current are among the most important forces to consider in maneuvering. The operator should use them to advantage, if possible, rather than attempting to fight the elements.

D.17. Spring lines

Spring lines are very useful when mooring with an off dock set; or when unmooring with an on-dock set. Use the spring lines to spring either the bow or stern in or out (See figures 10-21 and 10-22).



Going Ahead With Left Rudder Use of Spring Line
Figure 10-21



Making Use of Current
Figure 10-22



D.18. Thrusting away from another boat

To thrust away from another boat, a camel, or a ship, use the prop wash or “screw knuckle.” Just apply full power astern in a short burst then return to neutral. The prop wash will move forward between the boat and the surface alongside, pushing the boat away.

D.19. Fenders

Never attempt to fend a boat off a pier, float, etc., by hand or foot - always use a fender. Always keep the proper sized fenders handy.

D.20. Mooring/ off-dock wind

When mooring with an off-dock wind, the approach should be made at a sharp angle - 45° or more.

D.21. Mooring/ on-dock wind

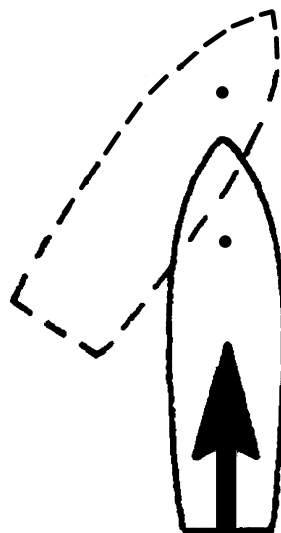
When mooring with an on-dock wind, approach parallel with the intended berth and rig the fender in appropriate positions. Ensure that the boat has no fore and aft movement when contacting the dock.

D.22. Tying down

Except for using the forward quarter spring, #3, never tie down the stern of a boat while maneuvering beside a dock, this restricts maneuverability.

D.23. Pivot point

The pivot point of a boat is approximately one-third of the way aft of the bow when the boat is underway at standard speed. This point moves forward as speed is increased and aft as speed is decreased (See figure 10-23).



Pivot Point
Figure 10-23



D.24. Protecting the stern

Keep the stern away from danger. If your propellers and rudder become damaged, you are crippled. If the stern is free to maneuver, you can work your boat out of trouble.

D.25. Control of the boat

The greatest amount of control over the boat is gained by maneuvering into the prevailing face of the wind or sea. Boats turn more slowly into the wind and sea than away from them. A single-screw boat will generally back into the wind when the boat has more “sail” area forward of the boat’s pivot point than aft.

D. 26. The wake

You are responsible for the boat’s wake.

D.27. Informing the crew

The coxswain must keep the crew informed. Never assume the crew knows everything that you are thinking.

D.28. Sea conditions

The most experienced coxswain knows what sea conditions they can operate in and in what conditions they cannot.

D.29. Forethought

Think ahead. Don’t take chances.
